

In conclusion let me say that this type of patient is a frequent caller on the physician. By the application of time and patience, together with the physiologic principles outlined, results can be obtained. There is no more grateful patient than that chronic sufferer who has been relieved of his distress and has been taught how to regulate his bowels without resort to abnormal means. To him the day of miracles is not past.

9 Exchange Place.

DISCUSSION

F. A. SPEIK, M.D. (800 Auditorium Building, Los Angeles).—The disproved theory of autointoxication needs to be made known to the public. Many persons do not know that the diagnosis of autointoxication is evidence of lack of knowledge on the part of the physician.

The outstanding causes of intestinal disturbance are probably the cathartic, the enema, and the roughage craze in diet. The cathartic, however, does not affect the stomach so much.

The caliber, as well as the consistency, is the criteria on which to judge the sufficiency of the stool. Mucus in the stool denotes either nature's attempt to protect the colon from a hard, dry stool, or its attempt to lubricate the colon walls, which are in apposition in event the colon is emptied sooner than normal. At times mucus is partly caused by irritant enemas given, which empty the tract before normal time. High colonic flushings and frequent enemas are harmful to the normal mucosa.

A patient is not constipated unless he has a hard, dry stool. As Doctor Bailey states, the amount or frequency of the stool are not criteria for such diagnosis.

The patient who judges his elimination by the amount or frequency of the stool is making business for the patent medicine venders. The doctor gets him after he has spent his money and gotten his intestine into such a state that it takes weeks and months to correct the pathologic function.

I can hardly imagine the forty-pound bowel movement after eight and one-half months of no evacuation.

The use of the Sippy bowel powders and of psylla seeds is not mentioned in the paper. Their use is an aid to this type of patient.

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E. S. KILGORE, M.D. (490 Post Street, San Francisco).—That happy laborer with the regular, semi-annual forty-pound evacuation should really be introduced to the great American pill-worshipping public. And the realization that our race existed long before the advent of diet reformers and nationally advertised cathartics would also be very salutary for most persons. Doctor Bailey's back to nature advice can be heartily endorsed in general principle; but I am sure he would agree that, like other good rules, it has its exceptions. For many city folks, life is necessarily far removed from nature, and for some of them it has seemed to me impracticable to insist on purely natural dietary and bowel habits. The diet of primitive man must have been very coarse in texture, and yet, as Doctor Bailey makes clear, we find very commonly that in the spastic type of constipation the highly artificial smooth diet is more conducive to bowel regularity and comfort. And while condemning the wholesale and indiscriminate use of cathartics, we must frankly admit that many an old habitué remains perfectly happy so long as he takes his mild laxative pill every night and is decidedly uncomfortable if he omits it, and that after many years thus lived he does not have to increase his dose, and shows no evidence of harm from the practice. To combat such an apparently benign addiction has always seemed to me quixotic. The patient with constipation, like all others, should be considered individually, and his treatment prescribed without subservience to any rule, however laudable the rule might be in most cases.

SIGNIFICANCE OF OCCULT BLOOD IN STOOLS BY THE BENZIDIN METHOD*

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WHEN blood leaves the vascular system in quantity it is grossly obvious; when the quantity is minute and subvisible it is occult, requiring the microscope, spectroscope, or chemical test for its detection.

CHEMICAL TESTS FOR OCCULT BLOOD

Fundamentally, there are few chemical tests for the detection of occult blood, the many others being but modifications of them. The most frequently employed are the benzidin, guaiac, and the amidopyrin color reactions.^{3,5,9} Of these tests, the benzidin is the most dependable.^{1,2,8} It is extremely sensitive, and this sensitiveness is its only failing; it consistently detects blood in quantities clinically insignificant.^{1,2} For this reason the cruder techniques may be preferred. Of these techniques the "dry," "glass slide" Wagner modification is one of the most serviceable because of its ease, rapidity, cleanliness, and reliability:² to a match-head quantity of benzidin crystals are added, in order, two cubic centimeters of glacial acetic acid and twenty drops of hydrogen peroxid. A few drops of this solution are poured over a fecal smear on a slide. A further simplification is effected in the following procedure:¹⁰ to a few benzidin crystals on a slide are added three drops of glacial acetic acid and two drops of hydrogen peroxid. These are stirred together, and then a match-head quantity of feces is stirred into the fluid. The color reaction may be green, bluish-green, or blue, depending upon the concentration of the hemoglobin. The quality, quantity, and order of addition of the reagents are factors in the dependability of the test, and so is the cleanliness of the glassware.⁴

REACTIONS OF FOODS AND MEDICAMENTS

It is important to know the reaction of various foods and medicaments to this test. The benzidin test reacts positively to raw vegetables, raw wheat flour, corn, oatmeal, potatoes, carrots, parsnips, and squash.^{5,7} After cooking they react negatively. All meats, whether cooked or raw, react positively. Fish, including shellfish, raw, fresh, or pickled, reacts positively: the reaction is weakened by cooking; and, after ingestion, the stools are usually negative. Eggs react negatively. Bland's pills are positive: but two grams daily, after ingestion, give negative results in the stools.^{5,6,7} Using the Wagner modification, the reaction is positive with cooked meat and negative with Bland's, C. C., and A. B. & S. pills, bismuth subnitrate, tincture of ferric chlorid, potassium iodid, and extract of cascara sagrada.¹ We have found the test to be negative to ferrous sulphate and aqueous ferric chlorid, as well as cupric and cuprous sulphate, liver extract (Lilly and Wilson) and thyroid extract (Parke, Davis); and positive to ventriculin

* From the Medical Service of Mary's Help Hospital.

(Parke, Davis) and thyroid extract (Lilly) on repeated examinations with a benzidin solution positive to blood as a control.

Of the above list, meat is the only item of clinical importance. What is its fate after ingestion? Does it modify or nullify the test in the stools? Some investigators report that an ordinary meat diet rarely gives a positive benzidin test.^{1, 5, 6, 7} Yet, after the ingestion of ten grams of scraped raw meat, but not less (using a guaiac procedure), a positive reaction is obtained.⁶ The guaiac test is less sensitive than the benzidin; and the ordinary diet contains much more than ten grams of meat. Again, after a two-day raw meat diet, the stools are positive to the benzidin and guaiac test, but they remain positive to benzidin seventy-two hours longer than to guaiac.⁵

SCOPE OF THIS STUDY

To determine the frequency of its appearance and its relation to the presence of meat as "muscle fibers," the stools of forty patients on general diets were examined for occult blood by the benzidin method, using the Wagner modification.

With occult blood	34	85%	
and muscle fibers, or blood cells	15 2		50%
Without occult blood	6	15%	
with muscle fibers	1		17%

Of the total number, the stools of thirty-four, or 85 per cent, reacted positively; and of these, seventeen, or 50 per cent, contained muscle fibers or blood cells as a possible modifying factor, whereas it appeared in only one of six cases, or 17 per cent, of stools reacting negatively.

The frequency with which muscle fibers appeared in conjunction with a positive benzidin test led us to carry the experiment further. Repeated stools of forty-three additional patients on a diet excluding meat, fish, and soups for a variable number of days were examined. The results, as outlined in the tables submitted, fell into three groups: (1) muscle fibers appearing neither before nor after the diet period; (2)

TABLE 1.—Muscle Fibers Appearing Neither Before Nor After the Diet Period			
Reaction Intensity		Diet Period	Diagnosis
Before	After	Days	
4°	3°	5	Epistaxis
3°	1°	5	Hemorrhoids
3°	1°	1	Rheumatic syndrome with splenomegaly
3°	0°	4	Cholecystitis
3°	2°	5	Duodenal ulcer
2°	0°	4	Cholecystitis: hypertension
4°	4°	4	Carcinoma stomach
3°	0°	10	Cholecystitis
3°	0°	6	Retroverted uterus: hypothyroidism
3°	0°	7	Nephritis with anemia
4°	1°	7	Nephritis
1°	0°	5	Cholecystitis
2°	0°	3	Constipation

TABLE 2.—Muscle Fibers Appearing Before, but Not After Diet Period			
Reaction Intensity		Diet Period	Diagnosis
Before	After	Days	
0°	0°	5	Cardiovascular disease
4°	1°	4	Cholecystitis
4°	0°	3	Postinfluenzal asthenia
4°	1°	3	Arteriosclerosis: hypertension
1°	0°	5	Cholecystitis
4°	4°	6	Pyloric ulcer
3°	0°	6	Hemorrhoids: hypothyroidism
4°	0°	24	Chronic malaria with hepatosplenomegaly
4°	1°	7	Menopause
3°	4°	6	Mucous hypertrophy stomach
3°	0°	7	Cholecystitis
4°	1°	12	Hypothyroidism
3°	1°	3	Arteriosclerosis
1°	0°	9	Cholecystitis

muscle fibers appearing before, but not afterward; (3) muscle fibers appearing before and after.

Except in the few cases where the pathology was considered accountable, epistaxis, hemorrhoids, duodenal ulcer, gastric carcinoma, pyloric ulcer, or mucous hypertrophy of stomach, the benzidin test was invariably altered by the diet,

TABLE 2b.—Muscle Fibers and Blood Cells Appearing Before but Not After Diet Period			
Reaction Intensity		Diet Period	Diagnosis
Before	After	Days	
4°	0°	15	Menopause
4°	0°	7	Syphilis stomach?
3°	0°	6	Cholecystitis
4°	0°	7	Menses
3°	0°	6	Arteriosclerosis

being rendered negative in eighteen cases and practically so (one plus reaction) in eight others.

In this group, though the occult blood reaction was invariably modified by the diet, the stools were not freed of muscle fibers. Neither was the reaction so decidedly altered, nor as frequently, as

TABLE 3.—Muscle Fibers Appearing Both Before and After Diet Period				
Reaction Intensity			Diet Period	Diagnosis
Before	M.F.	After	Days	
4°	none	2°	14	Epistaxis
4°	rare	2°	7	Cardiorenal
2°	few	1°	7	Cholecystitis
3°	few	2°	5	?
4°	few	1°	6	Hypertension
3°	few	1°	10	Hemorrhoids
3°	none	2°	7	Cholecystitis
4°	few	0°	4	Depressive psychosis; Mesenteric tumor?
4°	few	3°	3	?
4°	few	1°	4	Arteriosclerosis
4°	none	2°	3	Hepatomegaly

Stools (after diet)	No.	Reaction Changes			
		Neg.	%	2°	%
With muscle fibers	11	1	9	6	55
Without mus- cle fibers	32	18	56	23	72

it was in the groups preceding wherein muscle fibers were either not present or had disappeared.

In these stools wherein the reaction was changed from positive to negative, the mean period required was between 5 to 7 days, and the average time was 7.3 days.

Days 3 4 5 6 7 9 15 24
Stools 2 2 3 4 4 1 1 1

If the group is shifted to include reactions showing a change of two degrees or more, the mean period lies between 3 to 7 days, and the average time is 6.7 days.

Days 1 3 4 5 6 7 12 15 24
Stools 1 4 3 2 4 6 1 1 1

OTHER FACTORS AFFECTING THE TEST

Other conditions besides the presence of muscle fibers in the stools affect the dependability of the test. It is invalidated by affections of the nasopharynx, mouth, and anus, in which bleeding may play a part; as in epistaxis, tonsillitis, pyorrhea, hemorrhoids, ulcers, and fissures. Though many other diseases in our group are accompanied by a positive reaction, it may be reasonably concluded, from the changes noted under the conditions followed, that the reaction would be negative if the diet was adhered to for a sufficiently long period.

CLINICAL APPLICATION OF THE TEST

In its clinical application Gregerson has found the test, by the Wagner modification, to be constantly positive in carcinoma of the stomach, intermittently positive in ulcer, and negative in uncomplicated chronic gastritis, achylia, colitis, simple dyspepsia and constipation, nephritis, and cirrhosis of the liver. In carcinoma, however, the test was positive only in about 85 per cent of the cases. With this statement of Gregerson our findings tend to agree: of four cases, one proved negative—and without dieting.

COMMENT

The conditions under which the study was conducted were ideal from a clinical standpoint. Clinic patients afford a fair comparison of what may be expected of patients in private practice in regard to coöperation: we may have their word for it, but actually it is too frequently absent. Many conflicting results, though given some weight, must be discounted on this score—meat persisting in the stools while patients are on a meat-free diet. The "fishing" by which the specimens are obtained is revolting to too many temperaments to expect coöperation from all of them.

CONCLUSIONS

A meat diet very definitely affects the presence of occult blood in the stools by the benzidin method. To eliminate diet as a factor affecting the presence of occult blood by the benzidin

method, meat, meat-soups, and fish must be excluded therefrom.

The dependability of the benzidin test is appreciably affected when meat fibers are present in stools.

The time required to render the stools negative for occult blood by the benzidin method, in the absence of accountable pathology, varies between five to seven days on a meat-free diet.

The benzidin test has a negative value generally, and a positive value only in cases of gastrointestinal carcinoma and peptic ulcer.

When the natural antipathy of many patients is considered, as well as the factors that must be eliminated to render the benzidin test valid, and the time required to effect it, its use becomes very restricted. The factors are not readily controlled outside of hospital practice. The test is too often alternately positive and negative in cases other than carcinoma or ulcer. With these two exceptions, and only under the conditions above described, it becomes a mere diagnostic frill, and is not justified as a routine procedure.

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THE LURE OF MEDICAL HISTORY*

THOMAS AQUINAS

(1225 or 1227-1274 A. D.)

By FELIX CUNHA, M. D.

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THE accompanying illustration represents a facsimile of the first page of the collected works of Thomas Aquinas, priest, philosopher, physician, of the thirteenth century, undoubtedly the most famous of his time.

The book itself is one of the very earliest of the Swiss printings by Berthold Ruppel of Basel, a famed typographer of the time. It is a reprint of manuscripts, two of which bear the date 1468; but it is uncertain whether the book appeared before or after this date. Ruppel was a contempo-

* A Twenty-five Years Ago column, made up of excerpts from the official journal of the California Medical Association of twenty-five years ago, is printed in each issue of CALIFORNIA AND WESTERN MEDICINE. The column is one of the regular features of the Miscellany Department of CALIFORNIA AND WESTERN MEDICINE, and its page number will be found on the front cover index.